

SEEDING SPECIFICATIONS

PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 5/15 AND 9/15 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT
CREeping RED FESCUE	40%
KENTUCKY BLUEGRASS	30%
PERENNIAL RYEGRASS	30%

- If hydroseeding is used for temporary stabilization measures for turf establishment. Specifications are:
- Hydroseed Additives:
 Fertilizer: 19-19-19 75 lbs per 1,000 gallons of water
 Lime: 100 lbs. per 1,000 gallons of water
 Mulch: 300 lbs. per 1,000 gallons of water.
 Tackifier: 5 lbs. per 1,000 gallons of water.
- Areas having soil compaction as a result of construction shall have any crushed stone removed and the subgrade shall be *roto-tilled* to a 6" depth prior to placing topsoil.
 - If hand seeding, only straw mulch is to be used and secured by netting either organic or inorganic. If inorganic is used, it must be removed before the first mowing.
 - Starter fertilizer shall be applied at the manufacturer's suggested rate at the time of seeding. Fertilizer application will not be allowed in sensitive areas and adjacent to drainage ways as determined by the Engineer.
 - Watering is to be done by the Contractor and is to last for the duration of the warranty period to maintain proper growth. All apparatus necessary to apply the water must be furnished by the Contractor (i.e. hoses, sprinklers, etc.).
 - Staking of all topsoiled areas to control foot traffic will be required. Unless otherwise specified, acceptable staking materials will be grade stakes and twine or string with flagging attached for visibility.
 - A guarantee through the first mowing is required with any sparse or bare areas larger than 1 sq. ft. to be redone.
 - The Contractor is responsible for the first mowing. After the first mowing and prior to the Owner taking responsibility for the lawn areas the Contractor and an Owner's Representative shall meet to inspect the vegetation establishment.
 - Contractor is responsible for all topsoil to complete the project as shown. If existing volume of topsoil is inadequate, the Contractor, at no cost to the Owner, shall purchase offsite approved topsoil as necessary.

PLANT GUIDE FOR STORMWATER BIORETENTION AREAS

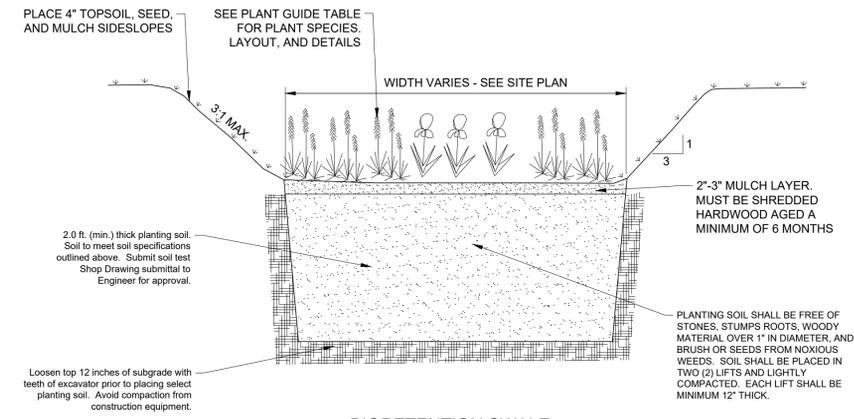
SHRUBS	HERBACEOUS SPECIES
<i>Hamamelis virginiana</i> (Witch Hazel)	<i>Iris versicolor</i> (Blue Flag)
<i>Ilex verticillata</i> (Winterberry)	<i>Labelia cardinalis</i> (Cardinal Flower)
<i>Viburnum dentatum</i> (Arrowhead)	<i>Rudbeckia laciniata</i> (Cutleaf Coneflower)
<i>Alnus serrulata</i> (Brook-side Alder)	<i>Scirpus cyperinus</i> (Woolgrass)
<i>Cornus stolonifera</i> (Redosier Dogwood)	<i>Scirpus pungens</i> (Three Square Bulrush)

- Shrubs and herbaceous species shall be planted in a staggered pattern along the bottom of the bioretention swale with a spacing of five to 10 feet on center. At least 3 different species of herbaceous perennials and shrubs shall be used.

BIORETENTION SOIL CHARACTERISTICS

Parameter	Value
pH range	5.2 to 7.00
Organic matter	3% maximum by volume
Soil (loamy sand, sandy loam, or loam)	
Sand	85% to 88% passing by weight
Silt	5% to 12% passing by weight
Clay	0% to 2% passing by weight
Mulch	Bark Mulch - Submit sample for approval
Available Phosphorus	0.2%

A DENSE AND VIGOROUS VEGETATIVE COVER SHALL BE ESTABLISHED OVER ALL PERVIOUS DRAINAGE AREAS UPSLOPE OF THE BIORETENTION AREAS.



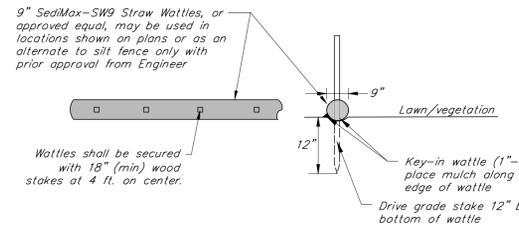
BIORETENTION SWALE
N.T.S.

NOTES:

- Contractor shall be responsible for the installation, maintenance, and removal of straw wattles in all locations shown on the plans.
- Maintenance shall be performed as needed and material removed when sediment reaches half of product height. Remove wattle after successful establishment of vegetation.

Wattle spacing chart

Slope Gradient (H:V)	Wattle spacing
< 6:1	50 ft. or less
4:1 - 6:1	35 ft. or less
> 4:1 - 2:1	20 ft. or less
> 2:1 - 1:1	10 ft. or less
> 1:1	5 ft. or less



Typical Straw Wattle Sediment Control

N.T.S.

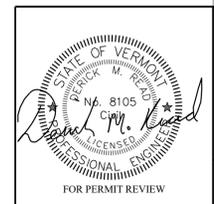
STORMWATER MAINTANCE NOTES

- GRASS-LINED SWALE:**
 - INSPECT REGULARLY FOR ACCUMULATION OF SEDIMENT OR DEBRIS, PARTICULARLY AFTER LARGE STORM EVENTS.
 - INSPECT AND REPAIR ANY EROSION AND RE-SEED BARE SPOTS AS NEEDED.
 - REMOVE SEDIMENT AND RESHAPE SWALE WHEN 6 INCHES OF SEDIMENT HAS ACCUMULATED.
- BIORETENTION SWALE**
 - INSPECT FOR EROSION AND ACCUMULATED SEDIMENT WITHIN POND. REMOVE SEDIMENT AND REPAIR ANY EROSION AS NECESSARY.
 - REMOVE ALL TRASH FROM THE BASIN.
 - INSPECT VEGETATION PER LANDSCAPE MAINTENANCE REQUIREMENTS.
- BROAD CRESTED VEGETATED WEIR: LOCATED AT OUTFALL OF BIORETENTION SWALE.**
 - INSPECT REGULARLY FOR SIGNS OF EROSION OR DISPLACEMENT OF STONE. REPAIR AS NEEDED.
 - INSPECT FOR DEBRIS/TRASH ACCUMULATION AND REMOVE AS NEEDED.
 - MONITOR FOR EVIDENCE OF CONCENTRATED FLOW CHANNELS OR EROSION AT OUTLET.

Landscape Maintenance Plan for Trees, Shrubs & Herbs

- April**
- Prune trees, shrubs and herbs
 - Prune shade trees, summer flowering shrubs and hedges. Do not prune spring flowering shrubs
 - Prune evergreen shrubs to maintain desired height and distance from buildings (typically 3 to 5 feet). Do not remove more than 1/3 of the volume of the shrub without prior approval from the property manager.
 - Prune any dead or damaged branches from trees or shrubs disposing of any diseased leaves.
 - Prune trees so that all branches are 5 to 10 feet away from buildings. Do not remove more than 1/3 of the volume of the tree without prior approval from the property manager.
- Fertilize Trees**
- Apply 10-10-10 granular fertilizer at the base of trees and shrubs per manufacturer's recommendations.
- Remove tree stakes**
- Remove any tree stakes or watering bags from the previous season.
- Spring cleanup**
- Clean up, edge planting beds and mulch
 - Remove dead leaves from deciduous trees in planting beds before mulching.
 - Remove weeds from the root in planting beds and tree rings. (Cutting weeds to the ground is not acceptable.)
 - All stand alone deciduous trees will have at least a 3' wide mulch ring from the trunk of the tree.
 - All stand alone conical conifer trees will have a mulch ring to the width of their lowest branches.
 - Spade edge planting beds/mulch rings to define the bed line.
 - Remove build up of old mulch in planting beds and around the base of trees and shrubs.
 - Apply 1" of shredded pine bark mulch in all planting beds and mulch rings keeping away from the bark of trees and shrubs

- June**
- One garden visit
 - Remove weeds from the root in planting beds and tree rings. (Cutting weeds to the ground is not acceptable.)
 - Replacements/Replace trees and shrubs that did not survive the winter
- July**
- Pruning shrubs & hedges
 - Prune Spring blooming shrubs. Prune hedges. Prune any vegetation that covers entryways, sidewalks, windows, etc.
 - Prune any dead or dying branches from trees or shrubs disposing of any diseased leaves.
- Two garden visits**
- Remove weeds from the root in planting beds and tree rings. (Cutting weeds to the ground is not acceptable.) Water any replacements from June.
- August**
- Fertilizer application
 - Apply 10,10,10 granular fertilizer according to manufacturer's recommendations at the base of shrubs and trees planted within the last 3 years.
 - Two garden visits
 - Remove weeds from the root in planting beds, tree rings, 'drip strips,' landscaped areas and adjacent to buildings. (Cutting weeds to the ground is not acceptable.) Water any replacements from June.
- September**
- Replacements
 - Replace shrubs or perennials that did not survive the summer



Date revised	Description	Checked	Date
Design	DMR		
Drawn	DMR		
Checked			
Scale	As Noted		
Date	May 19, 2023		
Project	97190/23182		

Stormwater Site Plan

Richmond Village Housing

Railroad Street, Richmond, Vermont

KREBS & LANSING Consulting Engineers, Inc.
10 Main Street, Colchester, Vermont 05446

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